

CLAIMS

What is claimed is:

1. An oil in water (o/w) emulsion composition, comprising water, an emulsifier, and an oil phase, wherein the emulsion is produced by the phase inversion temperature process and has a droplet size of 50 to 400 nm.
2. The emulsion composition of Claim 1, wherein the oil phase comprises compounds selected from the group consisting of fatty acid alkyl esters and triglycerides.
3. The emulsion composition of Claim 1, wherein the emulsifier comprises fatty acid alkyl esters corresponding to formula (I):
$$R^1-COO-R^2 \quad (I)$$
in which R^1 is a C₆₋₂₂ alkyl group and R^2 is a C₁₋₄ alkyl group.
4. The emulsion composition of Claim 1, wherein the oil phase is present in an amount of about 10 to 80% by weight of the total composition.
5. The emulsion composition of Claim 1, wherein the oil phase is present in an amount of about 20 to 50% by weight of the total composition.
6. The emulsion composition of Claim 1, wherein the water is present in an amount of about 20 to 90% by weight of the total composition.
7. The emulsion composition of Claim 1, wherein the water is present in an amount of about 30 to 80% by weight of the total composition.

8. The emulsion composition of Claim 1, wherein the water is present in an amount of about 30 to 70% by weight of the total composition.
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9. The emulsion composition of Claim 1, wherein the emulsifier comprises an emulsifier system comprising a hydrophilic emulsifier with a hydrophilic/lipophilic balance value of 8 to 18, and a hydrophobic emulsifier.
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10. The emulsion composition of Claim 9, wherein the ratio of the hydrophilic emulsifier to the hydrophobic emulsifier is 10:90.
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11. The emulsion composition of Claim 9, wherein the ratio of the hydrophilic emulsifier to the hydrophobic emulsifier is 90:10.
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12. The emulsion composition of Claim 1, wherein the emulsifier is present in an amount of about 1 to 25% by weight of the total composition.
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13. The emulsion composition of Claim 1, wherein the emulsifier is present in an amount of about 5 to 20% by weight of the total composition.
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14. The emulsion composition of Claim 1, wherein the emulsifier is present in an amount of about 5 to 15% by weight of the total composition.
15. The emulsion composition of Claim 1, further comprising an interfacially active enzyme comprising hydrolases and/or acyl transferases.
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16. The emulsion composition of Claim 15, wherein the hydrolases are selected from the group consisting of esterases, phospholipases, lipases

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and lipases/acyl transferases.

17. The emulsion composition of Claim 16, wherein lipases and/or lipases/acyl transferases are obtained from organisms selected from the
5 group consisting of *Alcaligenes*, *Aspergillus niger*, *Aspergillus oryzae*, *Aeromonas aerophila*, *Bacillus* species, *Candida albicans*, *Candida antarctica* (*Trichosporon oryzae*, *Pseudozyma antarctica*), *Candida antarctica*, *Candida cylindracea*, *Candida glabrata*, *Candida maltosa*, *Candida parapsilosis*, *Candida lipolytica*, *Candida tropicalis*, *Candida 10 viswanathii*, *Chromobacterium viscosum*, *Fusarium solani*, *Geotrichum candidum*, *Issatchenkia orientalis* (*Candida krusei*), *Kluyveromyces marxianus* (*C. kefyr*, *C. pseudotropicalis*), *Mucor javanicus*, *Penicillium camemberti*, *Penicillium roqueforti*, *Pichia guilliermondii* (*Candida guilliermondii*), *Porcina pancreas*, *Pseudomonas cepacia*, *Pseudomonas fluorescens*, *Rhizomucor michei*, *Rhizopus arrhizus*, *Rhizopus oryzae*, *Rhizopus niveus*, *Rhizopus javanicus* and *Thermomyces lanuginosus* and mixtures thereof.

18. The emulsion composition of Claim 15, wherein the enzymes are
20 present in an amount of about 0.001 to 20% by weight, and expressed as pure enzyme or as enzyme preparation, based on the total amount of oil phase present.

19. The emulsion composition of Claim 1, wherein the composition is used
25 in an enzyme-catalyzed reaction selected from the group consisting of hydrolysis, esterification, and transesterification.

20. The emulsion composition of Claim 19, wherein a cosmetic, pharmaceutical, or fine chemical product is produced in the enzyme-catalyzed reaction.

21. The emulsion composition of Claim 20, wherein the cosmetic, pharmaceutical, or fine chemical comprises a carotenoid, a sterol-containing oil component and/or vitamin E.

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22. A process for the enzyme-catalyzed esterification, transesterification or hydrolysis of fatty acid alkyl esters and/or triglycerides, wherein the o/w emulsion according to Claim 1 is used as the reaction medium.

10 23. The process of Claim 22, wherein a cosmetic, pharmaceutical, or fine chemical is produced in the enzyme-catalyzed reaction;

15 24. The process of Claim 23, wherein the cosmetic, pharmaceutical, or fine chemicals comprises a carotenoid, a sterol-containing oil component, and/or vitamin E.

25. The process of Claim 22, wherein the enzymes are interfacially active enzymes comprising hydrolases and/or acyl transferases.